

B' amended
20. (New) The apparatus of claim 1 wherein said sound generating means comprises a coil and a diaphragm activated by said coil for generating said acoustic sound wave.

REMARKS

This RCE is responsive to the final Office Action dated September 25, 2002, in which the Examiner rejects all the pending claims 1- 20 as either being anticipated by Suyama (US Patent No. 5,903,076) under 35 U.S.C. §102(b) or as being obvious over Suyama in view of Azima, et al. patents (U.S. Patent Nos. 6,151,402 and 6,192,136) under 35 U.S.C §103(a). The applicants have further amended independent claims 1 and 6 to more clearly define the present invention. The applicants respectfully traverse the rejection of the Examiner based on the amendment and the following detailed explanation.

The present invention discloses a novel technique applicable in an electroacoustic transducer utilized in an apparatus such as a cell phone in which the sound generating means and the vibration generating means are separate from each other, as now expressly defined in the amended independent claims 1 and 6. Each of the sound generating and vibration generating means can be designed independently and therefore optimally. In particular, different coils are utilized in the sound generating means and the vibration generating means respectively – the sound generating means comprises a first coil and the vibration generating means comprises one or more second coils, as expressly defined in independent claim 10, whereby the first and second coils can be selected independently of each other so as to realize their respective functions optimally.

The applicants do not believe that the above emphasized feature defined in the independent claims 1 and 6 is anticipated by Suyama (US Patent No. 5,903,076). Suyama, which is cited by the applicants in the background portion of the Specification, discloses a pager vibrating actuator in

which the means for generating sound and the means for generating vibration is the same unit. In other words, the sound generating means and the vibration generating means in Suyama are not separate from each other. In particular, the same moving coil is used for the purposes of generating both the voice and the perceivable vibration (see, e.g., col. 6, lines 5 – 22). As explained in the Specification of the present application, because of the fact that Suyama uses the same unit for the purpose of generating both sound and vibration, neither of the two functions can be optimally realized since there is a trade-off between sound signal generation and the vibration generation in design.

Claims 1 and 6 require that the sound generating means and the vibration generating means are separate from each other, claims 1 and 6 are thus believed not anticipated by Suyaman under 35USC §102(b) and therefore are patentable.

Furthermore, the applicants do not agree with the assertion of the Examiner that Claim 10 is obvious over Suyama in view of Azima et al (US Patent Nos. 6,192,136 and 6,151,402). As explained above, Suyama teaches to use the same coil to generate both sound and vibration (perceptible by a user), and is therefore different from the present invention as defined in claim 10 where different coils are used in the sound generating means and vibration generating means respectively. The Azima patents discuss nothing at all about the generation of a vibration perceptible by the user. The Azima patents disclose a vibration transducer for causing a resonant radiator member to resonate, thus forming an acoustic radiator which provides an acoustic output when resonating ('402 patent, col. 2, lines 31-42). The coil or coils 13 in Figures 13-15 of the Azima patents are used for generating an acoustic sound wave with the help of the panel 2 (e.g., see '402 patent, col. 5, lines 52-55). Therefore, the coil 13 in Azima is actually a component of sound generating means but NOT of a vibration generating means. Thus, the applicants do not believe that a combination of Azima with Suyama can reach the present invention in which sound

generating means comprises a first coil, and the vibration generating means (for generating vibration perceptible by a user) comprises one or more second coils, as defined in claim 10. Thus, the applicants believe claim 10 is non-obvious over Suyama, Azima or their combination, and is thus patentable.

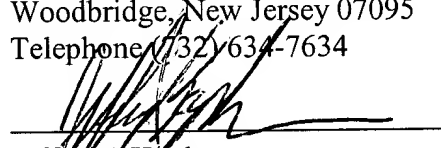
At least for the same reasons, independent claims 2-5, 7-9 and 11-20 are also patentable because each of them includes all the limitations of one of the above discussed independent claims 1, 6 and 10. In particular, claims 2 and 7 further define that the vibration generating means include two coils arranged in series opposition or in anti-parallel, which is not disclosed in either Suyama or Azima (no vibration generating means is disclosed in Azima at all). Claims 3, 8, 12 and 13 further define that a metal part is mechanically connected to the vibration generating coil, and which consists of a soft-magnetic material. These features can not be found anywhere in either Suyama or Azima.

The applicants respectfully request reconsideration in view of the above remarks and amendments. The Examiner is authorized to deduct additional fees believed due from our Deposit Account No. 11-0223.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal service as first class mail, in a postage prepaid envelope, addressed to Box Non-Fee Amendment, Commissioner for Patents, Washington, D.C. 20231 on December 23, 2002.

Dated December 23, 2002 Signed  _____ Print Name Jeffrey I. Kaplan



MARKED-UP VERSION OF THE AMENDED CLAIMS 1 AND 6

1. (Twice Amended) An apparatus having an electroacoustic transducer, said transducer

comprising:

a magnet system which generates a useful magnetic field in a useful field area and a stray magnetic field in a stray field area,

sound generating means arranged in said useful magnetic field for generating acoustic sound wave, and

vibration generating means for generating vibrations perceptible by a user of the apparatus, wherein the vibration generating means is separate from the sound generating means and comprises at least one movably mounted vibration generating coil arranged in the stray magnetic field generated.

6. (Twice Amended) An electroacoustic transducer, comprising:

a magnet system which generates a useful magnetic field in a useful field area and a stray magnetic field in a stray field area,

sound generating means arranged in said useful magnetic field for generating acoustic sound wave, and

vibration generating means for generating vibrations perceptible by a user of the apparatus, wherein the vibration generating means is separate from the sound generating means and comprises at least one movably mounted vibration generating coil arranged in the stray magnetic field.